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TITLE OF THE INVENTION

ACCURATE SIGNAL DETECTION IN A WIRELESS ENVIRONMENT

This invention is claiming priority to co-pending patent application entitled RF
5 TRANSMITTER HAVING IMPROVED OUT OF BAND ATTENUATION having a
filing date of 1/15/04 and a serial number of 10/757,931, ^{now U.S. Patent No. 7,181,187} *✓*

11/10/07

BACKGROUND OF THE INVENTION

TECHNICAL FIELD OF THE INVENTION

10 This invention relates generally to wireless communication systems and more
particularly to accurate signal detection by wireless communication devices operating in
such wireless communication systems.

DESCRIPTION OF RELATED ART

15 In a wireless communication system, wireless communication devices are
constantly listening to one or more wireless communication resources (e.g., radio
frequency (RF) channels) to determine whether they are intended recipients of a wireless
communication. In a wireless local area network (WLAN) as defined by standards, such
as IEEE802.11a, b, g, Bluetooth, et cetera, wireless communication devices monitor RF
20 frequencies for a prescribed preamble. Typically, when the wireless communication
devices are in the monitoring mode (i.e., seeking the preamble), they are in a limited
operational state to reduce power consumption. When the prescribed preamble is
detected, the wireless communication device becomes fully operational and thus is
25 consuming more power.

25 To detect a valid IEEE802.11a or g preamble, wireless communication devices
employ an auto correlation function to compare receive signals (i.e., received RF signals
down-converted to baseband signals) with a delayed representation of the received
signals. As is known, an IEEE802.11 wireless communications are packet-based where
30 each packet includes a preamble and data. The preamble includes a plurality of repetitive
short training sequences (STS) followed by a guard interval (GI), which is followed by a